OIPE

RAW SEQUENCE LISTING DATE: 06/06/2002
PATENT APPLICATION: **US/09/991,053** TIME: 14:54:39

Input Set : **A:\Cu40CON1.APP**
Output Set: **N:\CRF3\06062002\I991053.raw**

ENTERED

```
 3 <110> APPLICANT: Shimkets, Richard A.
 5 <120> TITLE OF INVENTION: NOVEL NUCLEIC ACID SEQUENCES ENCODING HUMAN SLIT-,
 6       MEGF-, AND ROUNDABOUT-LIKE POLYPEPTIDES
 8 <130> FILE REFERENCE: 15966-540 CON S-10
10 <140> CURRENT APPLICATION NUMBER: 09/991,053
11 <141> CURRENT FILING DATE: 2002-05-23
13 <150> PRIOR APPLICATION NUMBER: USSN 60/123,667
14 <151> PRIOR FILING DATE: 1999-03-09
16 <150> PRIOR APPLICATION NUMBER: 09/520,781
17 <151> PRIOR FILING DATE: 2000-03-08
19 <160> NUMBER OF SEQ ID NOS: 81
21 <170> SOFTWARE: PatentIn Ver. 2.1
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 1812
25 <212> TYPE: DNA
26 <213> ORGANISM: Homo sapiens
28 <220> FEATURE:
29 <221> NAME/KEY: CDS
30 <222> LOCATION: (537)..(1535)
32 <400> SEQUENCE: 1
33 atgactgccg ccataagaag acagagagaa ctgagtatcc tcccaaaggt gaatttcaat 60
35 ttttgttatt atgagtgtgc ttgcttatat aaaagaatat gcttaaggga aaaaaggtgc 120
37 tttaaagtta atattctaca aaccatagtt tatgagcata agaaattaca taatttacag 180
39 caatctgatg tattagtaat aataatgtat tattatctct taaacagtgt tttgttttat 240
41 ggctaacagt agcacctgtg aatgaggcag aacctgttat ttggatttca caaggatgtg 300
43 aaagtaatgg tactgttaaa agtaccaaaa atgtattata tgctttaaaa attctagcca 360
45 gaaaacagta ttttcctttt caacacatct attgaaagtg ttggataaat gcaggatgtt 420
47 aatatgctat aaacataaag tctgtttttа aaaaatagca tttgaaaatc atgaagggct 480
49 ttttgttttc ttttgtttgt atatatgttt attggtaaaa ggtgacactg gaagca atg 539
50                                                                Met
51                                                                  1
53 aac acc aca gtg atg caa ggc ttc aac aga tct gag cgg tgc ccc aga   587
54 Asn Thr Thr Val Met Gln Gly Phe Asn Arg Ser Glu Arg Cys Pro Arg
55               5                  10                  15
57 gac act cgg ata gta cag ctg gta ttc cca gcc ctc tac aca gtg gtt   635
58 Asp Thr Arg Ile Val Gln Leu Val Phe Pro Ala Leu Tyr Thr Val Val
59           20                  25                  30
61 ttc ttg acc ggc atc ctg ctg aat act ttg gct ctg tgg gtg ttt gtt   683
62 Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe Val
63       35                  40                  45
65 cac atc ccc agc tcc tcc acc ttc atc atc tac ctc aaa aac act ttg   731
66 His Ile Pro Ser Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr Leu
67  50                  55                  60                  65
```

RAW SEQUENCE LISTING DATE: 06/06/2002
PATENT APPLICATION: US/09/991,053 TIME: 14:54:39

Input Set : A:\Cu40CON1.APP
Output Set: N:\CRF3\06062002\I991053.raw

```
69 gtg gcc gac ttg ata atg aca ctc atg ctt cct ttc aaa atc ctc tct   779
70 Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu Ser
71                  70                  75                  80
73 gac tca cac ctg gca ccc tgg cag ctc aga gct ttt gtg tgt cgt ttt   827
74 Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg Phe
75              85                  90                  95
77 tct tcg gtg ata ttt tat gag acc atg tat gtg ggc atc gtg ctg tta   875
78 Ser Ser Val Ile Phe Tyr Glu Thr Met Tyr Val Gly Ile Val Leu Leu
79          100                 105                 110
81 ggg ctc ata gcc ttt gac aga ttc ctc aag atc atc aga cct ttg aga   923
82 Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu Arg
83      115                 120                 125
85 aat att ttt cta aaa aaa cct gtt ttt gca aaa acg gtc tca atc ttc   971
86 Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile Phe
87 130                 135                 140                 145
89 atc tgg ttc ttt ttg ttc ttc atc tcc ctg cca aat atg atc ttg agc   1019
90 Ile Trp Phe Phe Leu Phe Phe Ile Ser Leu Pro Asn Met Ile Leu Ser
91                  150                 155                 160
93 aac aag gaa gca aca cca tcg tct gtg aaa aag tgt gct tcc tta aag   1067
94 Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu Lys
95              165                 170                 175
97 ggg cct ctg ggg ctg aaa tgg cat caa atg gta aat aac ata tgc cag   1115
98 Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys Gln
99          180                 185                 190
101 ttt att ttc tgg act gtt ttt atc cta atg ctt gtg ttt tat gtg gtt   1163
102 Phe Ile Phe Trp Thr Val Phe Ile Leu Met Leu Val Phe Tyr Val Val
103     195                 200                 205
105 att gca aaa aaa gta tat gat tct tat aga aag tcc aaa agt aag gac   1211
106 Ile Ala Lys Lys Val Tyr Asp Ser Tyr Arg Lys Ser Lys Ser Lys Asp
107 210                 215                 220                 225
109 aga aaa aac aac aaa aag ctg gaa ggc aaa gta ttt gtt gtc gtg gct   1259
110 Arg Lys Asn Asn Lys Lys Leu Glu Gly Lys Val Phe Val Val Val Ala
111                 230                 235                 240
113 gtc ttc ttt gtg tgt ttt gct cca ttt cat ttt gcc aga gtt cca tat   1307
114 Val Phe Phe Val Cys Phe Ala Pro Phe His Phe Ala Arg Val Pro Tyr
115             245                 250                 255
117 act cac agt caa acc aac aat aag act gac tgt aga ctg caa aat caa   1355
118 Thr His Ser Gln Thr Asn Asn Lys Thr Asp Cys Arg Leu Gln Asn Gln
119         260                 265                 270
121 ctg ttt att gct aaa gaa aca act ctc ttt ttg gca gca act aac att   1403
122 Leu Phe Ile Ala Lys Glu Thr Thr Leu Phe Leu Ala Ala Thr Asn Ile
123     275                 280                 285
125 tgt atg gat ccc tta ata tac ata ttc tta tgt aaa aaa ttc aca gaa   1451
126 Cys Met Asp Pro Leu Ile Tyr Ile Phe Leu Cys Lys Lys Phe Thr Glu
127 290                 295                 300                 305
129 aag cta cca tgt atg caa ggg aga aag acc aca gca tca agc caa gaa   1499
130 Lys Leu Pro Cys Met Gln Gly Arg Lys Thr Thr Ala Ser Ser Gln Glu
131                 310                 315                 320
133 aat cat agc agt cag aca gac aac ata acc tta ggc tgacaactgt       1545
```

RAW SEQUENCE LISTING DATE: 06/06/2002
PATENT APPLICATION: US/09/991,053 TIME: 14:54:39

Input Set : A:\Cu40CON1.APP
Output Set: N:\CRF3\06062002\I991053.raw

```
Asn His Ser Ser Gln Thr Asp Asn Ile Thr Leu Gly
            325                 330
acatagggtt aacttctatt tattgatgag acttccgtag ataatgtgga aatcaaattt 1605
aaccaagaaa aaaagattgg aacaaatgct ctcttacatt ttattatcct cgtgtacaga 1665
aaagattata taaaatttaa atccacatag atctattcat aagctgaatg aaccattact 1725
aagagaatgc aacaggatac aaatggccac tagaggtcat tatttctttc tttctttatt 1785
cagcggccgc ttttttttt ttttttt                                     1812
<210> SEQ ID NO: 2
<211> LENGTH: 333
<212> TYPE: PRT
<213> ORGANISM: Homo sapiens
<400> SEQUENCE: 2
Met Asn Thr Thr Val Met Gln Gly Phe Asn Arg Ser Glu Arg Cys Pro
  1               5                  10                  15
Arg Asp Thr Arg Ile Val Gln Leu Val Phe Pro Ala Leu Tyr Thr Val
             20                  25                  30
Val Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe
          35                  40                  45
Val His Ile Pro Ser Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr
      50                  55                  60
Leu Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu
 65                  70                  75                  80
Ser Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg
                 85                  90                  95
Phe Ser Ser Val Ile Phe Tyr Glu Thr Met Tyr Val Gly Ile Val Leu
            100                 105                 110
Leu Gly Leu Ile Ala Phe Asp Arg Phe Leu Lys Ile Ile Arg Pro Leu
        115                 120                 125
Arg Asn Ile Phe Leu Lys Lys Pro Val Phe Ala Lys Thr Val Ser Ile
    130                 135                 140
Phe Ile Trp Phe Phe Leu Phe Phe Ile Ser Leu Pro Asn Met Ile Leu
145                 150                 155                 160
Ser Asn Lys Glu Ala Thr Pro Ser Ser Val Lys Lys Cys Ala Ser Leu
                165                 170                 175
Lys Gly Pro Leu Gly Leu Lys Trp His Gln Met Val Asn Asn Ile Cys
            180                 185                 190
Gln Phe Ile Phe Trp Thr Val Phe Ile Leu Met Leu Val Phe Tyr Val
        195                 200                 205
Val Ile Ala Lys Lys Val Tyr Asp Ser Tyr Arg Lys Ser Lys Ser Lys
    210                 215                 220
Asp Arg Lys Asn Asn Lys Lys Leu Glu Gly Lys Val Phe Val Val Val
225                 230                 235                 240
Ala Val Phe Phe Val Cys Phe Ala Pro Phe His Phe Ala Arg Val Pro
                245                 250                 255
Tyr Thr His Ser Gln Thr Asn Asn Lys Thr Asp Cys Arg Leu Gln Asn
            260                 265                 270
Gln Leu Phe Ile Ala Lys Glu Thr Thr Leu Phe Leu Ala Ala Thr Asn
        275                 280                 285
Ile Cys Met Asp Pro Leu Ile Tyr Ile Phe Leu Cys Lys Lys Phe Thr
```

RAW SEQUENCE LISTING DATE: 06/06/2002
PATENT APPLICATION: **US/09/991,053** TIME: 14:54:39

Input Set : **A:\Cu40CON1.APP**
Output Set: **N:\CRF3\06062002\I991053.raw**

```
209     290                 295                 300
211 Glu Lys Leu Pro Cys Met Gln Gly Arg Lys Thr Thr Ala Ser Ser Gln
212 305                 310                 315                 320
214 Glu Asn His Ser Ser Gln Thr Asp Asn Ile Thr Leu Gly
215                 325                 330
219 <210> SEQ ID NO: 3
220 <211> LENGTH: 3498
221 <212> TYPE: DNA
222 <213> ORGANISM: Homo sapiens
224 <220> FEATURE:
225 <221> NAME/KEY: CDS
226 <222> LOCATION: (214)..(3030)
228 <220> FEATURE:
229 <221> NAME/KEY: misc_feature
230 <222> LOCATION: (3047)
231 <223> OTHER INFORMATION: an n may be any one of a or t or g or c
233 <400> SEQUENCE: 3
234 gcgactattt cccccaaaga gacaagcaca catgtaggaa tgacaaaggc ttgcgaagga 60
236 gagagcgcag cccgcggccc ggagagatcc cctcgataat ggattactaa atgggataca 120
238 cgctgtacca gttcgctccg agccccggcc gcctgtccgt cgatgcaccg aaaagggtga 180
240 agtagagaaa taaagtctcc ccgctgaact act atg agg tca gaa gcc ttg ctg  234
241                                     Met Arg Ser Glu Ala Leu Leu
242                                       1               5
244 cta tat ttc aca ctg cta cac ttt gct ggg gct ggt ttc cca gaa gat   282
245 Leu Tyr Phe Thr Leu Leu His Phe Ala Gly Ala Gly Phe Pro Glu Asp
246          10                  15                  20
248 tct gag cca atc agt att tcg cat ggc aac tat aca aaa cag tat ccg   330
249 Ser Glu Pro Ile Ser Ile Ser His Gly Asn Tyr Thr Lys Gln Tyr Pro
250      25                  30                  35
252 gtg ttt gtg ggc cac aag cca gga cgg aac acc aca cag agg cac agg   378
253 Val Phe Val Gly His Lys Pro Gly Arg Asn Thr Thr Gln Arg His Arg
254  40                  45                  50                  55
256 ctg gac atc cag atg att atg atc atg aac gga acc ctc tac att gct   426
257 Leu Asp Ile Gln Met Ile Met Ile Met Asn Gly Thr Leu Tyr Ile Ala
258                  60                  65                  70
260 gct agg gac cat att tat act gtt gat ata gac aca tca cac acg gaa   474
261 Ala Arg Asp His Ile Tyr Thr Val Asp Ile Asp Thr Ser His Thr Glu
262              75                  80                  85
264 gaa att tat tgt agc aaa aaa ctg aca tgg aaa tct aga cag gcc gat   522
265 Glu Ile Tyr Cys Ser Lys Lys Leu Thr Trp Lys Ser Arg Gln Ala Asp
266          90                  95                  100
268 gta gac aca tgc aga atg aag gga aaa cat aag gat gag tgc cac aac   570
269 Val Asp Thr Cys Arg Met Lys Gly Lys His Lys Asp Glu Cys His Asn
270      105                 110                 115
272 ttt att aaa gtt ctt cta aag aaa aac gat gat gca ttg ttt gtc tgt   618
273 Phe Ile Lys Val Leu Leu Lys Lys Asn Asp Asp Ala Leu Phe Val Cys
274 120                 125                 130                 135
276 gga act aat gcc ttc aac cct tcc tgc aga aac tat aag atg gat aca   666
277 Gly Thr Asn Ala Phe Asn Pro Ser Cys Arg Asn Tyr Lys Met Asp Thr
```

RAW SEQUENCE LISTING DATE: 06/06/2002
PATENT APPLICATION: US/09/991,053 TIME: 14:54:39

Input Set : A:\Cu40CON1.APP
Output Set: N:\CRF3\06062002\I991053.raw

```
278                 140                 145                 150
280 ttg gaa cca ttc ggg gat gaa ttc agc gga atg gcc aga tgc cca tat   714
281 Leu Glu Pro Phe Gly Asp Glu Phe Ser Gly Met Ala Arg Cys Pro Tyr
282             155                 160                 165
284 gat gcc aaa cat gcc aac gtt gca ctg ttt gca gat gga aaa cta tac   762
285 Asp Ala Lys His Ala Asn Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr
286         170                 175                 180
288 tca gcc aca gtg act gac ttc ctt gcc att gac gca gtc att tac cgg   810
289 Ser Ala Thr Val Thr Asp Phe Leu Ala Ile Asp Ala Val Ile Tyr Arg
290     185                 190                 195
292 agt ctt gga gaa agc cct acc ctg cgg acc gtc aag cac gat tca aaa   858
293 Ser Leu Gly Glu Ser Pro Thr Leu Arg Thr Val Lys His Asp Ser Lys
294 200                 205                 210                 215
296 tgg ttg aaa gaa cca tac ttt gtt caa gcc gtg gat tac gga gat tat   906
297 Trp Leu Lys Glu Pro Tyr Phe Val Gln Ala Val Asp Tyr Gly Asp Tyr
298                 220                 225                 230
300 atc tac ttc ttc ttc agg gaa ata gca gtg gag tat aac acc atg gga   954
301 Ile Tyr Phe Phe Phe Arg Glu Ile Ala Val Glu Tyr Asn Thr Met Gly
302             235                 240                 245
304 aag gta gtt ttc cca aga gtg gct cag gtt tgt aag aat gat atg gga   1002
305 Lys Val Val Phe Pro Arg Val Ala Gln Val Cys Lys Asn Asp Met Gly
306         250                 255                 260
308 gga tct caa aga gtc ctg gag aaa cag tgg acg tcg ttc ctg aag gcg   1050
309 Gly Ser Gln Arg Val Leu Glu Lys Gln Trp Thr Ser Phe Leu Lys Ala
310     265                 270                 275
312 cgc ttg aac tgc tca gtt cct gga gac tct cat ttt tat ttc aac att   1098
313 Arg Leu Asn Cys Ser Val Pro Gly Asp Ser His Phe Tyr Phe Asn Ile
314 280                 285                 290                 295
316 ctc cag gca gtt aca gat gtg att cgt atc aac ggg cgt gat gtt gtc   1146
317 Leu Gln Ala Val Thr Asp Val Ile Arg Ile Asn Gly Arg Asp Val Val
318                 300                 305                 310
320 ctg gca acg ttt tct aca cct tat aac agc atc cct ggg tct gca gtc   1194
321 Leu Ala Thr Phe Ser Thr Pro Tyr Asn Ser Ile Pro Gly Ser Ala Val
322             315                 320                 325
324 tgt gcc tat gac atg ctt gac att gcc agt gtt ttt act ggg aga ttc   1242
325 Cys Ala Tyr Asp Met Leu Asp Ile Ala Ser Val Phe Thr Gly Arg Phe
326         330                 335                 340
328 aag gaa cag aag tct cct gat tcc acc tgg aca cca gtt cct gat gaa   1290
329 Lys Glu Gln Lys Ser Pro Asp Ser Thr Trp Thr Pro Val Pro Asp Glu
330     345                 350                 355
332 cga gtt cct aag ccc agg cca ggt tgc tgt gct ggc tca tcc tcc tta   1338
333 Arg Val Pro Lys Pro Arg Pro Gly Cys Cys Ala Gly Ser Ser Ser Leu
334 360                 365                 370                 375
336 gaa aga tat gca acc tcc aat gag ttc cct gat gat acc ctg aac ttc   1386
337 Glu Arg Tyr Ala Thr Ser Asn Glu Phe Pro Asp Asp Thr Leu Asn Phe
338                 380                 385                 390
340 atc aag acg cac ccg ctc atg gat gag gca gtg ccc tcc atc ttc aac   1434
341 Ile Lys Thr His Pro Leu Met Asp Glu Ala Val Pro Ser Ile Phe Asn
342             395                 400                 405
```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 06/06/2002
PATENT APPLICATION: **US/09/991,053** TIME: 14:54:40

Input Set : **A:\Cu40CON1.APP**
Output Set: **N:\CRF3\06062002\I991053.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; N Pos. 3047
Seq#:5; N Pos. 2882
Seq#:13; N Pos. 22
Seq#:19; N Pos. 1491,1565,1627
Seq#:74; N Pos. 1139,1142,1172
Seq#:76; N Pos. 1143,1146,1176